



What is Good Habitat?

What do sequoias need to live long enough to grow this big? This 23-foot-wide (7m) tree and its enormous neighbors give us our first clues. Look around where they are growing.

To reproduce and thrive, sequoias need specific conditions: moist soil, open sunny forest, a climate that is not too cold, and bare, ashy ground. Therefore, they also need the natural processes that create those conditions. As you walk this trail, watch for evidence of these processes.





A Giant's Footprint


These stones simulate a “footprint” of Ed by Ned, the twin sequoias growing to your right. The footprint gives an idea of the area on which mature sequoias stand. It may seem large, but consider the enormous size of the tree balanced upon that spot.



Ed by Ned—the nickname given by John and James Jordan in 1906—are two individual trees that grew so close together their bases joined.

The combined bases of Ed by Ned spread 34 feet long and 25 feet wide (10.3m x 7.6m)—a great size for a swimming pool.





A fire worker examines the base of a large fire scar. A typical sequoia here might have survived several fires each century.

New wood grows from either side of a fire scar, covering a little more each year. This healing growth leaves telltale marks on the tree's annual growth rings. These marks reveal how many fires a tree has survived.

Frequent Fire

Numerous fires created the large scar on the sequoia in front of you. Frequent fire is common in good sequoia habitat, and mature trees have ways to survive. Most large sequoias survive fire and live well despite large scars.

Thick bark with many air pockets insulates the wood from heat. With little sap or pitch in it, the bark is not very flammable. High branches hold foliage well above most fires. With competing plants burned away, surviving trees get more water, nutrients, and sun.



Sun Worshipers

Mature Sequoia


Over 250 feet (76m) tall, the round tops of these monarchs tower over the forest. There are several mature trees in this view.

Young Sequoia

These "spire tops," about 100 years old and 100 feet (30m) or more tall, are difficult to distinguish because they blend with other tree species.

Look across the meadow for a view of sunbathing sequoias. Young sequoias have branches all the way down their trunks, gathering as much solar energy as they can. Their pointed tops grow quickly toward the sun.

As sequoias grow taller, they lose lower branches due to fire or lack of sun. Once the trees rise above the rest of the forest canopy, their pointed crowns round off. Dead tops mark the oldest sequoias. Once mature, they grow no taller, but continue to grow thicker.



As fire moves through the forest, it creates ideal conditions for sequoia seeds to sprout—bare ground fertilized by ash. It also kills soil fungus that may harm seedlings.

Sequoia cones open when fire's heat rises. Soon tiny seeds drop to the ground. If they fall onto a layer of dry leaves, they will not survive. On soil left bare by fire, they can take root.

Hot Spots

The four large sequoias that you see here are probably the same age. Such clusters may be found where fire once burned very hot. Most fires in this area are low ground fires, not hot enough to kill many big trees.

Where fire does flare up enough to kill a patch of trees, seedlings get a good start. No trees block their sunlight or compete for water and nutrients. A thousand years later, a group of giants may stand in what was once a hot spot.





Too Wet

This open meadow is too wet for trees. Sequoia roots can't live in this soggy soil. Rainwater and melting snow drain here from the surrounding hills. The water collects in a depression in the bedrock, creating this moist opening.

Yet giant sequoias need enormous amounts of water. By growing near the meadow but not in it, they can benefit. Their roots capture moisture as it drains toward the meadow.

Too Wet for Trees to Grow

The amount of water in the meadow varies with the season. In spring—with winter's snowmelt—there may be standing water across the meadow.

A cross-sectional diagram of a meadow depression. The top layer is green, representing grass or vegetation. Below it is a blue layer with arrows pointing inward from the sides, labeled 'COLLECTING WATER'. At the very bottom is a grey, textured layer labeled 'BED ROCK'.

COLLECTING WATER

B E D R O C K